

# Figure 1

	10	20	30	40	50	60	
1	D-----NKTFSVCSRD---FTPPTVKILOSSCDGGGHHFPPTIQLLCLVSGYTPGTINITW						Human IgE C2C3C4
1	DLTIRAR-----PVNITKPTVDLLHSSCDPNA-FHSTIQLYCFVYGHIONDVSIIHW						Rat IgE C2-C3-C4
1	EFHHHHHHTLSLPESGPVTIIPPTVKLFHSSCDPRGDAHSTIQLLCLVSGFSPAKVHVVTW						His6-Op2-3-4
	70	80	90	100	110	120	
53	LEDGQVMD--VDLSTASTTQEGELASTQSELTLSQKHWLSDRITYTCQVTYQGHTFEDSTK						Human IgE C2C3C4
51	LMDDRKIYETHAQNVLIK-EEGKLASTYSRLNITQQQWMSESTFTCKVTSQGENYWHAHTR						Rat IgE C2-C3-C4
61	LVDGQEAENLFPYTTRPKREGGQTFSLQSEVNITQQQWMSSNTYTCHVKHNGSIFEDSAQ						His6-Op2-3-4
	130	140	150	160	170	180	
111	KCADSNPRGVSAAYLSRPSPFDFLIRKSPTITCLVVDLAPSKGTVNLTWSRASGKFPVNHST						Human IgE C2C3C4
110	RCSDDPRGVITYLIPPSPLDLYENGTPKLTCLVLDLES-EENITVTWVRERKKSIGSAS						Rat IgE C2-C3-C4
121	KCSDDTPRGISAYILPPTPDQLFVKKVPTIGCLIVDLASAEN-VKVTWSRESGGPVNPSS						His6-Op2-3-4
	190	200	210	220	230	240	
171	RKEEKQRNGTLTVTSTLPVGTTRDWIEGETYQCRVTHPHLPRALMRSTTKTSGPRAAPEVY						Human IgE C2C3C4
169	QRSTKHHNATTSITSILPVDKDWIEGEGYQCRVDHPPHFKPIVRSITKAPGKRSAPEVY						Rat IgE C2-C3-C4
180	LVVKEQYNGTFTVTSHLPVNTDDWIEGDTYTCRLESPDMVPVPLIRTISKAPGKRLAPEVY						His6-Op2-3-4
	250	260	270	280	290	300	
231	AFATPEWPGSRDKRTLACLIQNFMPEDISVQWLHNEVQLPDAHSTTQPRKTKGSG--FF						Human IgE C2C3C4
229	VFLPPE-EEEKDKRTLTLCLIQNFFPEDISVQWLQDSKLIKPSQHSSTTTPKYNNGSNQRRFF						Rat IgE C2-C3-C4
240	MLP-PSPEETGTTTRVTCLIRGFYFSEISVQWLFNNEEDHTGHHTTTRPQKDHTDPSFF						His6-Op2-3-4
	310	320	330	340	350		
289	VFSRLEVTRAWEQKDEFICRAVHEAASPSQTVQRAVSVNPGK					Human IgE C2C3C4	
288	IFSRLEVTKALWTQTKQFTCRVIHEALREPRKLERTISKSLGNTSLRPSQASM					Rat IgE C2-C3-C4	
299	LYSRMLVNKSIWEKGNLVTCTRVVHEALPGSRTLEKSLHYSAGN					His6-Op2-3-4	

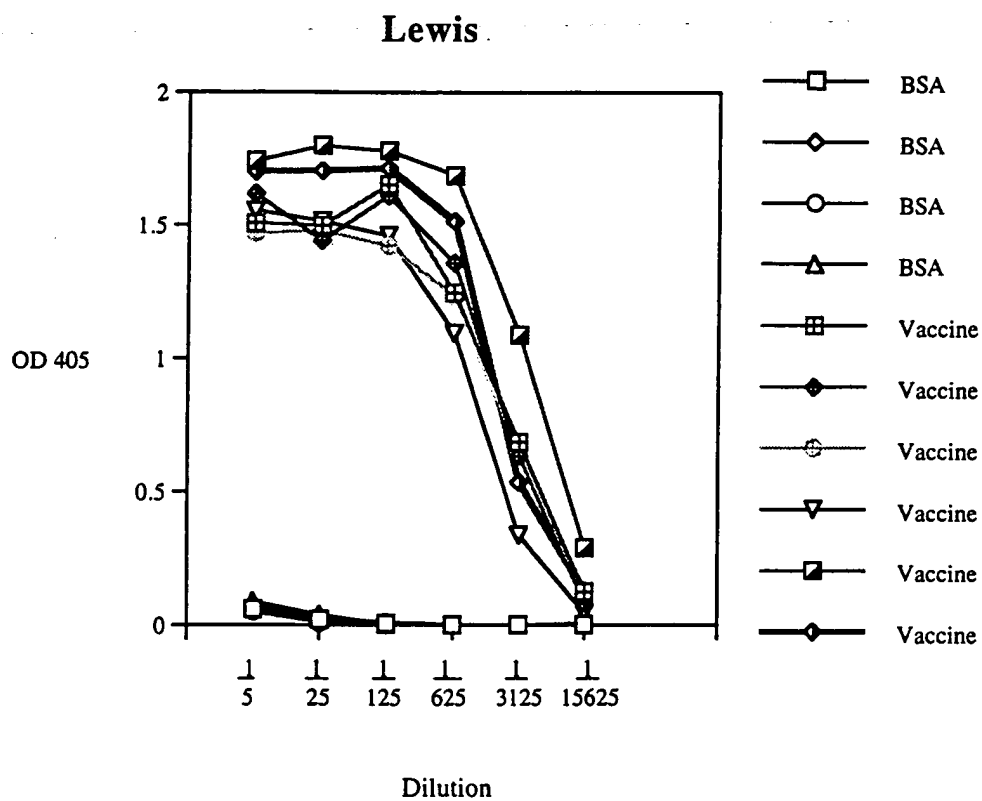
# Figure 2a

1	EFHHHHHHHTLSLPESGPVTIIPTVKLFHSSCDPRGDAHSTIQLLCLVSGFSPAKVHVTK	His6-Op2-RatC3-OpC4
1	EFHHHHHHHTLSLPESGPVTIIPTVKLFHSSCDPRGDAHSTIQLLCLVSGFSPAKVHVTK	His6-Op2-ratOp3-Op4
1	EFHHHHHHHTLSLPESGPVTIIPTVKLFHSSCDPRGDAHSTIQLLCLVSGFSPAKVHVTK	His6-Op2-Mouse3-Op4
1	EFHHHHHHHTLSLPESGPVTIIPTVKLFHSSCDPRGDAHSTIQLLCLVSGFSPAKVHVTK	His6-Op2-3-4
1	EFHHHHHHHTEVYSDISK-DPIPTVFLHSSCDPRGDAHSTIQLLCLITVSPAGIQD	His6-Platypus C2-C3-C4
61	LVDGQEAENLFPYTTRPKREGGQTFSLQSEVNITQGQWSSNTYTCHVKH--HGSIFEDS	His6-Op2-RatC3-OpC4
61	LVDGQEAENLFPYTTRPKREGGQTFSLQSEVNITQGQWSSNTYTCHVKH--HGSIFEDS	His6-Op2-ratOp3-Op4
61	LVDGQEAENLFPYTTRPKREGGQTFSLQSEVNITQGQWSSNTYTCHVKH--HGSIFEDS	His6-Op2-Mouse3-Op4
61	LVDGQEAENLFPYTTRPKREGGQTFSLQSEVNITQGQWSSNTYTCHVKH--HGSIFEDS	His6-Op2-3-4
60	LVDGQKAEENLFPYTAPPRREGNRSFSGSEVNITADADLGKTFCTHGLADKKTYQPC	His6-Platypus C2-C3-C4
119	SRRCSDDEPRGVITYLIPPSPLDLYENGTPKLTCLVLDLESEEHITVTWVPERKKKISIGSA	His6-Op2-RatC3-OpC4
119	SRRCSDDEPRGVITYLIPPSPLDLYENGTPKLTCLVLDLESEEHITVTWVPERKKKISIGSA	His6-Op2-ratOp3-Op4
119	SRRCSDDEPRGVITYLIPPSPLDLYENGTPKLTCLVLDLESEEHITVTWVPERKKKISIGSA	His6-Op2-Mouse3-Op4
119	AQKCSDDTPRGISAAILPPTFQDLFVKKVPTIGCLVDLAAAHKVTWSRESGGPNNP	His6-Op2-3-4
120	APKCADSDPRGITVFITPPSTPLVISKFPFILTITIDIVTSGMEVTVSPGGLPLBNA	His6-Platypus C2-C3-C4
179	SORSTKHHH-AATTSITSILPVDAKDWIEGERTQCRVDHFFKPIVHSITKLPGKRLAPE	His6-Op2-RatC3-OpC4
179	RSLVVKEQYNGTFTVTSHLPVITDDWIEGERTQCRVDHFFKPIVHSITKLPGKRLAPE	His6-Op2-ratOp3-Op4
178	SQWYTKHHH-AATTSITSILPVDAKDWIEGERTQCRVDHFFKPIVHSITKLPGKRLAPE	His6-Op2-Mouse3-Op4
178	SSLVVKEQYNGTFTVTSHLPVITDDWIEGERTQCRVDHFFKPIVHSITKLPGKRLAPE	His6-Op2-3-4
179	ESFEEQKQFNGTMTFICTVFNHIQDENECESTCEPAAFDLSPIIKRTVTFLPGKRLAPE	His6-Platypus C2-C3-C4
238	VYMLPPSPEET--GTTTRTVTCLIRGFYPSSEISVQWLFHNEEDHTGHHTTTRPOKDHGTD	His6-Op2-RatC3-OpC4
239	VYMLPPSPEET--GTTTRTVTCLIRGFYPSSEISVQWLFHNEEDHTGHHTTTRPOKDHGTD	His6-Op2-ratOp3-Op4
238	VYMLPPSPEET--GTTTRTVTCLIRGFYPSSEISVQWLFHNEEDHTGHHTTTRPOKDHGTD	His6-Op2-Mouse3-Op4
238	VYMLPPSPEET--GTTTRTVTCLIRGFYPSSEISVQWLFHNEEDHTGHHTTTRPOKDHGTD	His6-Op2-3-4
239	VYAFPPHQAELVSHASLSLTCLIPGFYFENISVREILDHKKPLPTENYRTTKILFNPQAPDP	His6-Platypus C2-C3-C4
296	SFFLYSRMLVNKSIWEKGNLVTCTRVVHEALPGSRTLEKSLHYSAGH	His6-Op2-RatC3-OpC4
297	SFFLYSRMLVNKSIWEKGNLVTCTRVVHEALPGSRTLEKSLHYSAGH	His6-Op2-ratOp3-Op4
296	SFFLYSRMLVNKSIWEKGNLVTCTRVVHEALPGSRTLEKSLHYSAGH	His6-Op2-Mouse3-Op4
296	SFFLYSRMLVNKSIWEKGNLVTCTRVVHEALPGSRTLEKSLHYSAGH	His6-Op2-3-4
299	AYFLYSPLAVHEKTEIQGHVYITQVHEALPGSRTLEKSLHYSAGH	His6-Platypus C2-C3-C4

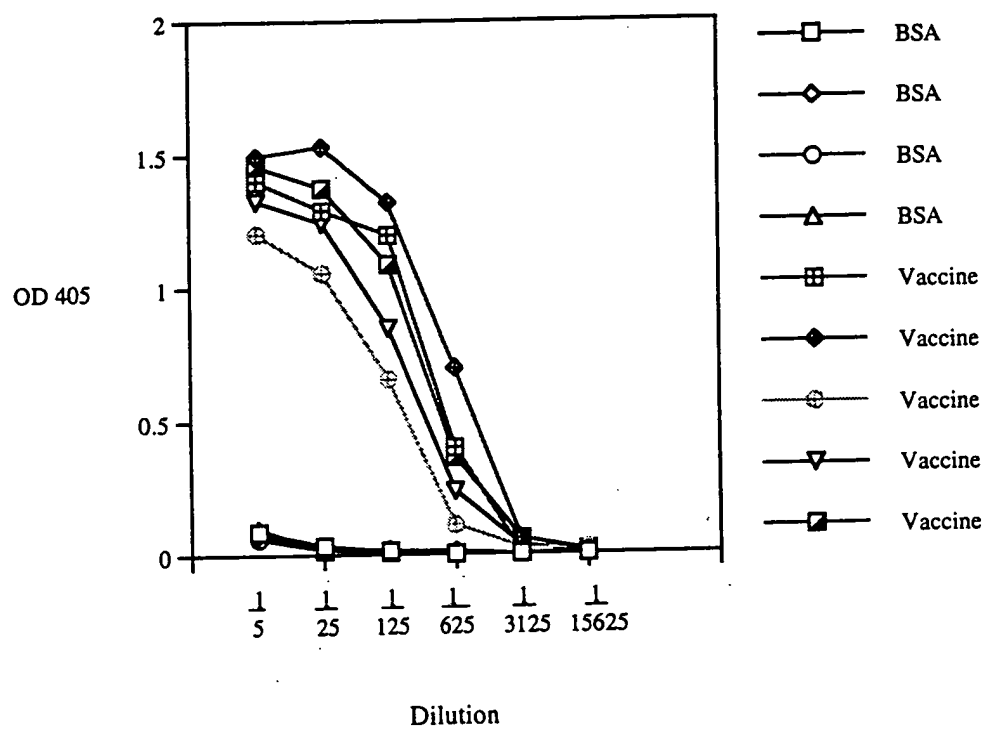
# Figure 2b

	10	20	30	40	50	60	
1	EFHHHHHHHTLSL	PESGPVTIIIP	PTVKLFHSSCD	PRGDAHSTIQL	LCLVSGFSPA	KVHVHTW	His6-OpC2-HumanC3-OpC4
1	EFHHHHHHHTLSL	PESGPVTIIIP	PTVKLFHSSCD	PRGDAHSTIQL	LCLVSGFSPA	KVHVHTW	His6-OpC2-RatC3-OpC4
1	EFHHHHHHHTLSL	PESGPVTIIIP	PTVKLFHSSCD	PRGDAHSTIQL	LCLVSGFSPA	KVHVHTW	His6-OpC2-PigC3-OpC4
1	EFHHHHHHHTLSL	PESGPVTIIIP	PTVKLFHSSCD	PRGDAHSTIQL	LCLVSGFSPA	KVHVHTW	His6-OpC2-DogC3-OpC4
1	EFHHHHHHHTLSL	PESGPVTIIIP	PTVKLFHSSCD	PRGDAHSTIQL	LCLVSGFSPA	KVHVHTW	His6-Op2-3-4
	70	80	90	100	110	120	
61	LVDGQEAENLFP	YTTTRPKREGG	QTFSLQSEVNI	TQGQWSSNTYT	CHVKHNGSIF	EDSSR	His6-OpC2-HumanC3-OpC4
61	LVDGQEAENLFP	YTTTRPKREGG	QTFSLQSEVNI	TQGQWSSNTYT	CHVKHNGSIF	EDSSR	His6-OpC2-RatC3-OpC4
61	LVDGQEAENLFP	YTTTRPKREGG	QTFSLQSEVNI	TQGQWSSNTYT	CHVKHNGSIF	EDSSR	His6-OpC2-PigC3-OpC4
61	LVDGQEAENLFP	YTTTRPKREGG	QTFSLQSEVNI	TQGQWSSNTYT	CHVKHNGSIF	EDSSR	His6-OpC2-DogC3-OpC4
61	LVDGQEAENLFP	YTTTRPKREGG	QTFSLQSEVNI	TQGQWSSNTYT	CHVKHNGSIF	EDSAQ	His6-Op2-3-4
	130	140	150	160	170	180	
121	KC-ADSNPRGV	SAYLSRPSFDF	LIRKSPITITCL	VVDLAPSKGT	VNLTWSRASG	KPV---	His6-OpC2-HumanC3-OpC4
121	RCS-DDEPRGV	ITYLIPPSPLD	LYENGSTPKLT	CLVLDLES-E	ENITVTWVRER	KKSI---	His6-OpC2-RatC3-OpC4
121	RCTAESEPRGV	SAYLSPPPLDL	YVHKSPKLTCL	VVDLASEN-V	NLLWSRENKGG	VILP	His6-OpC2-PigC3-OpC4
121	KCS-ESDPRGV	TSYLSPPSPDL	YVHKAPKITCL	VVDLATMEG-M	NLTWYRESKEP	V---	His6-OpC2-DogC3-OpC4
121	KCS-DTDPRI	SAYILPPTQDL	FVKKVPTIGCL	LIVDLASAEN-	VKVTWSRESGG	GPV---	His6-Op2-3-4
	190	200	210	220	230	240	
177	NHSTRKEEKQR	NGTTLTVTSTL	PLVGTTRDWIE	GETYQCRVTH	PHLPALMRST	TKLP GKRLA	His6-OpC2-HumanC3-OpC4
176	GSASQRSTKHN	NATTSITSLP	VDAKDWIEGEG	YQCRVDHPH	PKPIVRSITKL	PGKRLA	His6-OpC2-RatC3-OpC4
180	PPGPPVIKQFN	GTFSATSTLP	VNVSDWIEGET	YYCNVTHPDL	PKPILRSISK	LP GKRLA	His6-OpC2-PigC3-OpC4
176	NPGPLNKKDHF	NGTITVTSTL	PLVNTNDWIE	GETYYCRVTH	PHLPKDIVRSI	AKLP GKRLA	His6-OpC2-DogC3-OpC4
176	NPSSLVVKKEQ	YNGTFTVTSH	LPVNTDDWIE	GDYTCRLSPD	MPVPLIRTISK	AP GKRLA	His6-Op2-3-4
	250	260	270	280	290	300	
237	PEVYMLPPSP	EETGTTTRTVT	CLIRGFYPSEI	SVQWLFNNEE	DHTGHHTTTTR	PQKD HGTDP	His6-OpC2-HumanC3-OpC4
236	PEVYMLPPSP	EETGTTTRTVT	CLIRGFYPSEI	SVQWLFNNEE	DHTGHHTTTTR	PQKD HGTDP	His6-OpC2-RatC3-OpC4
240	PEVYMLPPSP	EETGTTTRTVT	CLIRGFYPSEI	SVQWLFNNEE	DHTGHHTTTTR	PQKD HGTDP	His6-OpC2-PigC3-OpC4
236	PEVYMLPPSP	EETGTTTRTVT	CLIRGFYPSEI	SVQWLFNNEE	DHTGHHTTTTR	PQKD HGTDP	His6-OpC2-DogC3-OpC4
236	PEVYMLPPSP	EETGTTTRTVT	CLIRGFYPSEI	SVQWLFNNEE	DHTGHHTTTTR	PQKD HGTDP	His6-Op2-3-4
	310	320	330	340			
297	SFFLYSRMLVN	KSIWEKGNLVT	CRVVHEALPGS	RSTLEKSLHYS	SAGN		His6-OpC2-HumanC3-OpC4
296	SFFLYSRMLVN	KSIWEKGNLVT	CRVVHEALPGS	RSTLEKSLHYS	SAGN		His6-OpC2-RatC3-OpC4
300	SFFLYSRMLVN	KSIWEKGNLVT	CRVVHEALPGS	RSTLEKSLHYS	SAGN		His6-OpC2-PigC3-OpC4
296	SFFLYSRMLVN	KSIWEKGNLVT	CRVVHEALPGS	RSTLEKSLHYS	SAGN		His6-OpC2-DogC3-OpC4
296	SFFLYSRMLVN	KSIWEKGNLVT	CRVVHEALPGS	RSTLEKSLHYS	SAGN		His6-Op2-3-4

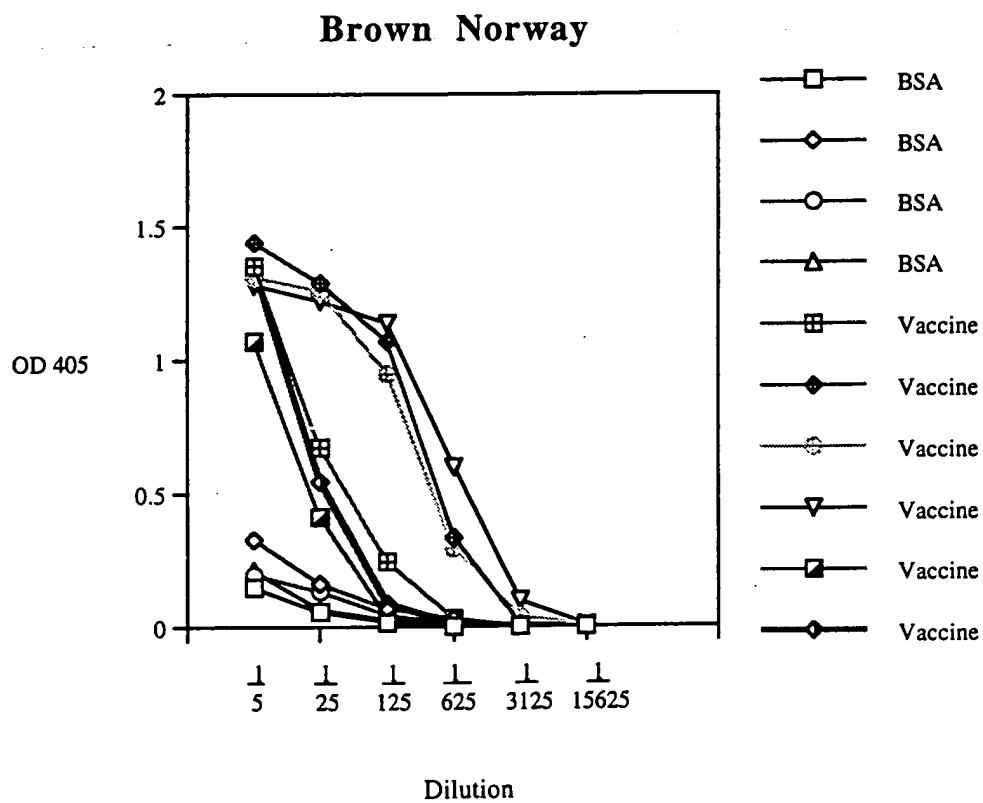
Figure 3a



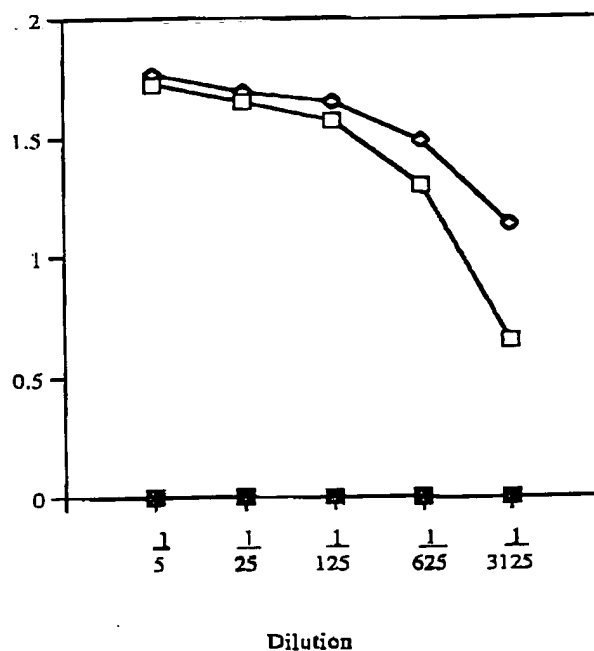
## Louvain













### Figure 3c



### Figure 4



	ORO vaccinated 8
	ORO vaccinated 9
	OOO vaccinated 19
	OOO vaccinated 20
	OOO vaccinated 21
	OOO vaccinated 22
	PPP vaccinated 27
	PPP vaccinated 28
	PPP vaccinated 29
	PPP vaccinated 30